

A NEW VARIETY OF *HEDYOSMUM* (CHLORANTHACEAE) FROM NICARAGUA

Hedyosmum Swartz is a genus of ca. 40 species of primarily montane neotropical trees and shrubs with one herbaceous species in the Far East. In the New World species are found from southern Mexico to Panama, Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil, and Paraguay, as well as in the West Indies. The greatest density of species occurs in the northern wet Andes. In the field the genus is distinguished by its opposite leaves with connate sheathing petiole bases, stipular appendages along the distal margin of the sheath, staminate inflorescences composed of many ebracteate flowers of single stamens, and pistillate inflorescences composed of solitary or clustered, bracteate flowers.

Until a recent monograph (Todzia, 1986), the genus has been in a state of taxonomic confusion, in part because in the last hundred years *Hedyosmum* had never been studied over its entire geographic range. Several species proposed from Central American material had, in fact, already been described from South America. Such is the case of *Hedyosmum goudotianum* Solms, a species originally described from Colombia but now recognized to range from Nicaragua to Peru (Todzia, 1986). This species is distinguished from all other *Hedyosmum* species by its elongate racemose or paniculate pistillate inflorescences with many-flowered cymes on short peduncles, notably coriaceous leaves with impressed secondary venation and sharp, closely spaced teeth, long leaf sheaths with striate triangular patches of appressed hairs below the stipules, and trichomes (when present) restricted to the abaxial sides of the primary, secondary, and sometimes tertiary veins.

Although populations throughout its range are variable with respect to trichome density, leaf size, and inflorescence length, the northernmost population of *H. goudotianum* is morphologically quite distinct and, given its isolated geographic position, is thought worthy of taxonomic recognition. These collections from Nicaragua already have been recognized as morphologically different from conspecific populations in Costa Rica (Burger, 1973, 1977). They are unusual in being glabrous and in having shorter internodes with often overlapping leaf bases, shorter leaf sheaths that lack the striate patch beneath the

stipular processes, and leaves with more widely spaced teeth.

A key to the varieties is provided below with a full description for *Hedyosmum goudotianum* var. *mombachanum*.

***Hedyosmum goudotianum* Solms in A. P. de Candolle, Prodr. 16: 482. 1869. TYPE:** Colombia: "Quindiu, El Inciendial, La palmilla." Nov.–May 1844 (pist.), *Goudot s.n.* [lectotype (here designated), P.]. This is the only specimen of Goudot seen from this locality. It is clearly designated as type material in Solms's handwriting.

KEY TO VARIETIES OF *HEDYOSMUM GOUDOTIANUM*

1. Internodes (3–)4–9 cm long; leaves with teeth 1–2(–3) mm distant and with impressed secondary veins, these strigose beneath; leaf sheaths well-spaced and not overlapping, (1–)1.8–3 cm long, with a triangular patch of appressed hairs below stipular processes; Costa Rica, Panama, Venezuela, Colombia, Ecuador, and Peru
..... *H. goudotianum* var. *goudotianum*
1. Internodes 1–4(–5) cm long; leaves with teeth 2.5–4 mm distant and with secondary veins flush with surface, these glabrous beneath; leaf sheaths often overlapping, (0.7–)1–1.6 cm long without a striate patch below stipular processes; Nicaragua
..... *H. goudotianum* var. *mombachanum*

Hedyosmum goudotianum* Solms var. *goudotianum

Tafallaea goudotiana (Solms) O. Kuntze, Revis. Gen. Pl. 2: 566. 1891.

Hedyosmum montanum W. Burger, Phytologia 26: 133. 1973. TYPE: Costa Rica. Heredia: Río Vueltas (upper Río Patria), eastern slope of Volcán Barba near the continental divide, 2,000 m, 22 & 24 Nov. 1969 (pist.), *Burger & Liesner 6336* (holotype, F; isotypes, BM, COL, CR, GH, MO).

Distribution. Costa Rica, Panama, Venezuela, Colombia, Ecuador, and Peru in montane cloud forest. In Peru this variety has been recorded in association with *Chusquea*, while in Costa Rica it is known to occur with *Podocarpus*, *Weinmannia*, and *Clethra*. In Central America flowering is most common May through August,

while in South America flowering occurs sporadically throughout the year.

Hedyosmum goudotianum Solms var. **mombachanum** Todzia, var. nov. TYPE: Nicaragua. Granada: "En las últimas antenas del Volcán Mombacho, 1,200–1,220 m, 23 Feb. 1981 (pist.), *Moreno & López 7134* (holotype, MO; isotypes, F, HNMN not seen).

Differt a var. *goudotianum* internodiis 1–4(–5) cm longis, laminis foliorum subtus glabris dentibus 2.5–4 mm distantibus, venis lateralibus subtus non elevatis, vaginae glabrae superpositae.

Dioecious, aromatic shrubs or small trees, 2–4 m tall, with prop roots; bark whitish-gray to gray, smooth; young stems quadrate, brittle, usually rugose, sometimes glabrous; large stems terete, with tubular leaf bases persisting and becoming fibrous with age; internodes 1–4(–5) cm long, the nodes slightly swollen. Leaf blades narrowly elliptic, elliptic, ovate to obovate, 3.3–13.6 cm long, (1–)2.7–5.3(–7) cm broad, with acuminate tips 0.2–0.7 cm long, cuneate to obliquely cuneate at base, at margins sharply serrulate with teeth 2.5–4 mm distant continuing to apex, sometimes revolute, smooth, dull, light green above and beneath when fresh, drying chartaceous to subcoriaceous, slightly scabrous, gray to brown above and beneath; midveins impressed above, raised beneath, glabrous; lateral veins 6–8, 7–13 mm distant, arcuate, flush with surface and glabrous beneath; intersecondary veins extending $\frac{1}{3}$ to $\frac{1}{2}$ distance to margin; free portions of petioles smooth to asperous, 0.5–0.8 cm long, narrowly winged; petiolar sheaths smooth to asperous, glabrous, (0.7–)1–1.6 cm long, 0.6–0.8 cm broad at apex, slightly inflated, terete or quadrangular, with or without 2 raised longitudinal ciliate lines extending down length of sheath from stipular appendages, overlapping, persistent, becoming gray and fibrous with age, not extending beyond free portions of petioles, at distal margin with 2 caducous, linear to slightly fimbriate stipular appendages ca. 1 mm long. Staminate inflorescences terminal or axillary, 1.5–4 cm long, composed of 1–2 opposing pairs of spikes on a short rachis terminated by a single spike; bracts subtending terminal inflorescence linear to obovate, 0.7–2 cm long, 0.1–0.5 cm broad; mature spikes 1.5–4.5 cm long, 0.3–0.6 cm broad, with ca. 100 stamens, sessile or borne on short peduncles 1–2 mm long, each subtended by a small, dentate or entire, spatulate to obovate

bract 0.2–1 cm long, 1–2 mm broad; stamens congested on axis but becoming 0.5–1.5 mm distant; rachis 1–2.5 mm thick with a thick, irregularly margined, basal annulus; anthers yellowish-green, 1.3–1.8 mm long, 0.6–1 mm thick; connectives extended ca. 0.2 mm beyond thecae, acute. Pistillate inflorescences axillary or terminal, racemes or panicles (1.3–)2.5–4.4 cm long bearing 8–13 cymules; subtending inflorescence bracts 15–20 mm long, 3–5 mm broad; cymules with (2–)3–4 clustered flowers, 3–4 mm long and broad, borne on short peduncles 1–3(–5) mm long, alternate or opposite on inflorescence axis, 2–6 mm distant; subtending floral bracts green, connate in lower $\frac{1}{4}$ to $\frac{3}{4}$, 2–3 mm long including acuminate tips 1–2 mm long, 2–4 mm broad, ciliate or entire along free margins, enclosing $\frac{1}{2}$ to $\frac{3}{4}$ of flower. Pistillate flowers trigonous, 2–3 mm long, 1.5–2 mm thick with a minute to large pore on each face of the ovary; perianth lobes deltate, acute, 0.2–0.5 mm long, basally connate; stigmas white, 2–3 mm long, irregular in shape, linear to irregularly lobulate, 2- or 3-angled, with long papillae. Fruiting cymules white, irregularly globose, 5–8 mm diam.; seeds ca. 3 mm long, brown, trigonous, minutely papillate.

Distribution. Elfin and cloud forest on Volcán Mombacho and Volcán Maderas in Nicaragua in association with *Cavendishia*, *Clusia*, and *Freziera* at elevations of 740–1,220 m. Flowering and fruiting occur sporadically throughout the year.

Additional specimens examined. NICARAGUA. GRANADA: Volcán Mombacho, *Atwood 7771* (MO, US); upper slopes of Volcán Mombacho along W shore of Lake Nicaragua, ca. 15 km S of Granada, 1,100–1,200 m, *Croat 39092* (F, MO); Volcán Mombacho, Plan de Flores, 740 m, *Grijalva 2506* (HNMN, TEX); N slope of Volcán Mombacho, above Finca El Progreso, *Neill 878* (MO, MSC); W slope of Volcán Mombacho, rd. and trail above Finca Santa Ana, from reservoir to somewhat above Plan del Flores, 950–1,150 m, *Stevens 4332* (F, HNMN, MO, TEX). RIVAS: near summit and upper slopes of Volcán Maderas above Balgüe, Isla Ometepe, 1,000–1,200 m, *Nee & Robleto Téllez 28086* (HNMN, TEX).

I gratefully acknowledge the support of the National Science Foundation (doctoral dissertation improvement grant BSR-8400923) and The University of Texas at Austin (graduate continuing fellowship). I thank B. B. Simpson, J. Henrickson, and B. A. Stein for comments on various drafts of this paper, and M. C. Johnston for help with the Latin diagnosis. The curators

and staff of the following herbaria generously provided loans of specimens: BM, COL, CR, F, GH, MO, MSC, P, TEX, WIS, US.

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